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Federal Program Support of Optometric Education

1980-1981

Under PL 94-484, the Health Professions Educational Assistance Act of 1976, the Congress provided authority for institutional support programs as well as student support programs for schools of the health professions. Student support programs represented two separate approaches: one of loan assistance and another program of assistance for exceptional financial need, primarily to encourage and provide the opportunity for minority and economically disadvantaged students to participate in post-graduate education in the health professions.

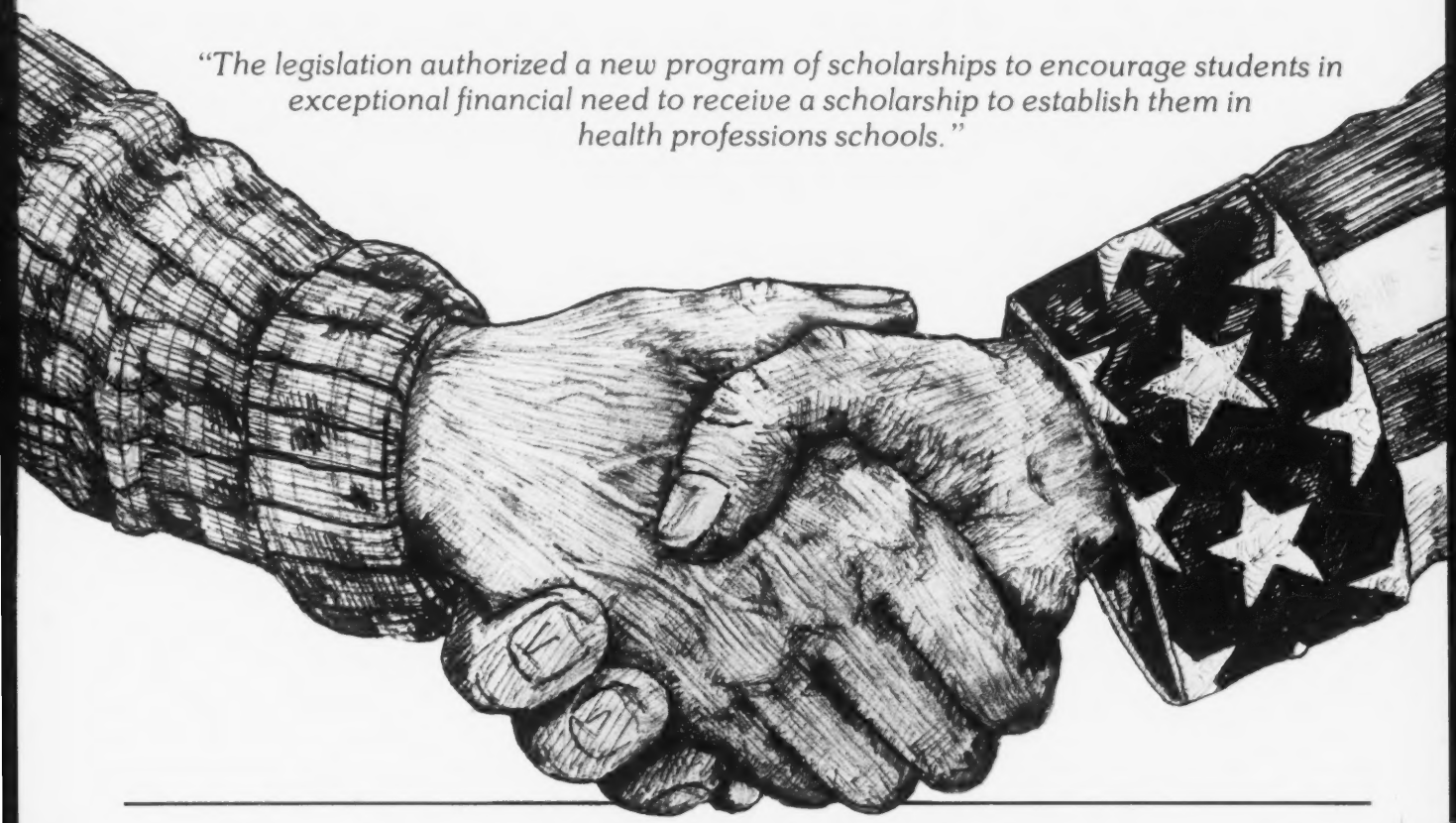
The direct institutional support program frequently referred to as capitation provided an incentive to the schools, in the case of optometry, to increase their class sizes in order to overcome projected shortages of manpower and, secondly, to insure the opportunity for students from those states which did not have schools to have equitable opportunity within the private schools of optometry to be selected.

Capitation

Under the authority for capitation grants schools of optometry were authorized to receive a level of $765 per year for each full-time student enrolled in the program. In order to be eligible for the receipt of that, it was required that schools maintain their first-year enrollments at least at the level of the previous year, 1976-77.

In addition, it was required that each of the public schools enroll at least 25

"The legislation authorized a new program of scholarships to encourage students in exceptional financial need to receive a scholarship to establish them in health professions schools."



Health Professions Educational Improvement Program Grant Amounts by Fiscal Years – Optometry

Institution	Capitation Grants								
	1972[a]	1973[b]	1974[c]	1975[d]	1976[e]	1977[f]	1978[g]	1979[h]	1980
University of Alabama in Birmingham	31,903	45,250	58,820	50,322	40,917	46,030	58,426	47,805	37,336
University of California, Berkeley	147,033	138,984	150,472	118,615	81,834	79,461	100,213	83,504	62,537
Southern California College of Optometry	171,308	189,019	235,557	208,783	148,366	146,512	149,740	117,651	87,272
Illinois College of Optometry	315,567	316,109	352,925	273,174	189,615	181,716	228,286	184,392	140,709
Indiana University	170,614	163,549	176,462	136,587	92,812	86,426	103,696	84,125	62,771
New England College of Optometry	176,162	202,723	230,085	192,249	130,269	122,009	136,197	112,063	86,339
Ferris State College	—0—	—0—	—0—	—0—	—0—	—0—	38,306	36,940	28,002
University of Missouri-St. Louis	—0—	—0—	—0—	—0—	—0—	—0—	—0—	12,417	9,334
State University of New York	19,423	40,725	63,198	61,413	49,100	65,342	87,832	76,675	61,371
Ohio State University	136,630	131,874	143,632	124,777	93,144	69,647	88,993	72,639	55,304
Pacific University	189,340	182,296	191,509	150,451	100,130	100,355	130,007	102,130	78,405
Pennsylvania College of Optometry	313,486	316,109	350,873	275,742	184,625	168,103	222,095	182,840	138,142
Southern College of Optometry	332,212	323,220	380,283	287,038	195,936	188,364	229,833	181,090	135,809
University of Houston	167,146	161,610	181,250	136,587	87,489	105,737	151,288	124,791	95,906
Inter-American University of Puerto Rico	—0—	—0—	—0—	—0—	—0—	—0—	—0—	—0—	7,471
Totals	2,170,824	2,211,468	2,515,066	2,015,738	1,394,237	1,359,702	1,724,912	1,419,881	1,086,708

SOURCE: Adapted from U.S. Department of Health and Human Services, Bureau of Health Professions. "Health Professions Educational Improvement Program—Table 1. Grant Amounts by Individual Schools and by Fiscal Years. Mimeographed, n.d. Grant awards for 1980 from U.S. Department of Health and Human Services, Bureau of Health Professions. "Approval List for Grants and Awards." Mimeographed, September, 1980.

[a]Amount awarded in FY 1972 represented 86.69 percent of the computed formula amount for schools of optometry.
[b]Amount awarded in FY 1973 represented 80.81 percent of the computed formula amount for schools of optometry.
[c]Amount awarded in FY 1974 represented 85.49 percent of the computed formula amount for schools of optometry.
[d]Amount awarded in FY 1975 represented 64.18 percent of the computed formula amount for schools of optometry.
[e]Amount awarded in FY 1976 represented 41.58 percent of the computed formula amount for schools of optometry.
[f]Amount awarded in FY 1977 represented 39.57 percent of the computed formula amount for schools of optometry.
[g]Amount awarded in FY 1978 represented 50.57 percent of the computed formula amount for schools of optometry.
[h]Amount awarded in FY 1979 represented 40.57 percent of the computed formula amount for schools of optometry.

percent of their first-year students from states without an accredited optometry school or in the case of the nonprofit private schools 50 percent of their first-year class from states without accredited optometry schools.

While $765 per student was the authorizing level in the enabling legislation, the appropriations process did not appropriate sufficient monies for this authority to provide for maximum funding. Therefore, over the years various allocations have been made to schools of optometry, and these are presented in one of the tables.

Financial Need First-Year Scholarships

The legislation authorized a new program of scholarships to encourage students in exceptional financial need—minorities and those in economic distress—the opportunity to receive a scholarship to establish them in health professions schools. The scholarships were authorized to be equal to the dollar value of National Health Service Corps scholarships. This represented a monthly stipend plus an amount for living expenses and the provision of direct payment of tuition and other reasonable educational expenses. This program, unlike the National Health Service Corps, did not have a service obligation attached to it.

Health Professions Student Loans

The other program supporting students is the health professions student loan program. This is a continuation of a program that existed under the previous legislation. The amount which a student can borrow is the cost of tuition plus $2500 with an interest rate established at 7%. This program is based upon the schools' application to the federal government for a level of capitalization of their funds based on the anticipated need for their students. Schools of optometry have participated in this program at various levels. Since this is a continuing program that previously existed, the students who previously had been under this program and graduated are now in a position and obligation to begin repaying the loans. The funds received by the schools in repayment of existing loans also go into that fund to add to and supplement the amount that comes from the government. At some point in time, as occurred this year with the University of California-Berkeley and Southern California College of Optometry the amounts that were being repayed by previous borrowers will be adequate to meet anticipated needs of new students borrowing from the program.

The 1980-81 levels of funds awarded to schools of optometry for each of the federal support programs are presented in the following tables. □

Exceptional Financial Need Scholarship Program
Academic Year 1980-81 – Optometry

Institution	Awards					
	Resident		Non-Resident		Total	
	Number	Funds	Number	Funds	Number	Funds
University of Alabama-Birmingham	1	$ 8,559.00			1	$ 8,559.00
Southern California College Optom.			1	$12,729.00	1	12,729.00
Illinois College of Optometry			1	13,344.00	1	13,344.00
Indiana University	1	7,869.00			1	7,869.00
New England College of Optometry			1	17,234.00	1	17,234.00
Ferris State College	1	10,454.00			1	10,454.00
University of Missouri-St. Louis	1	9,005.00			1	9,005.00
SUNY College of Optometry	1	10,050.00			1	10,050.00
Ohio State University	1	8,645.00			1	8,645.00
Pacific University			1	12,919.00	1	12,919.00
Pennsylvania College of Optometry			1	8,014.00	1	8,014.00

SOURCE: Adapted from U.S. Dept. of Health and Human Services, Bureau of Health Professions. *Notification to Members of Congress of Academic Year 1980-81 Allotments to Schools Participating in the Scholarship Program for First-Year Students of Exceptional Financial Need.* Hyattsville, Md.: Bureau of Health Professions, August 1980.

NOTE: The amounts for each school represent the allotment authorized under the Further Continuing Appropriations Act for 1980, PL 96-123.

Health Professions Student Loan Program
Academic Year 1980-81 – Optometry

Institution	Amounts Allocated		
	1st Allocation	2nd Allocation	Total
University of Alabama-Birmingham	$21,461	$ 665	$22,126
University of California-Berkeley	none requested[a]		
Southern California College Optom.	none requested[a]		
Illinois College of Optometry	84,567	2,620	87,187
Indiana University	38,374	1,190	39,564
New England College of Optometry	51,025	1,581	52,606
Ferris State College	17,055	529	17,584
University of Missouri-St. Louis	5,683	178	5,861
State University of New York	36,952	1,146	38,098
The Ohio State University	32,689	1,014	33,703
Pacific University	47,756	1,480	49,236
Pennsylvania College of Optometry	85,278	2,642	87,920
Southern College of Optometry	83,289	2,580	85,869
University of Houston	36,000	[b]	36,000

SOURCE: Adapted from U.S. Dept. of Health and Human Services, Bureau of Health Professions. *Notification to Members of Congress of Academic Year 1980-81 Allotments to Schools Participating in the Health Professions Student Loan Program.* Hyattsville, Md.: Bureau of Health Professions, September 1980.

NOTE: This notification represents an initial allocation made July, 1980, and a second allocation resulting from returns made by participating schools after reassessment of academic year 1980-81 needs. The total amounts for each school represent the allotment authorized under the Further Continuing Appropriations Act for 1980, PL 96-123.

[a]Return dollars adequate for 1980-81 needs.

[b]Requested funds met by first allocation.

Annual Survey of Optometric Educational Institutions 1979-80

The accompanying tables have been extracted from the 1979-80 Annual Survey of Optometric Educational Institutions conducted by the Council on Optometric Education of the American Optometric Association.

The following report summarizes the major characteristics of student enrollment, academic achievement, financial aid and student expenditure for the academic year 1979-80. The survey is conducted annually as part of the ongoing process of accreditation; it is the intent of JOE to present highlights of this report on a yearly basis.

Courtesy Pacific University College of Optometry

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Student Enrollment

Overall student enrollment for the academic year 1979-80 did not increase significantly over the previous year, totaling 4,500 in 1979-80 compared to 4,436 in 1978-79. This represented an increase of only 1%.

Female enrollment, however, has continued to increase over that of previous years. Women represented 271 students or 23% of the entering class in 1979-80 and 868 students or 19% of total enrollment. This reflected an increase of 17% in first-year enrollments and 14% in overall enrollment compared to 1978-79.

Minority students represented 8.78% of the student body in 1979-80, compared to 8% in 1978-79. This was a significant increase over previous years during which minority enrollment had declined from a high of 8.9% (346 students) in 1975-76. Although the percentage of overall minority representation increased significantly in 1979-80, the actual numbers increased by only 37, with 395 students in 1979-80 compared to 358 in 1978-79. This reflected an increase of 10%.

Women accounted for 37% (145 students) of minority enrollment in 1979-80. Of minorities enrolled, 53% were Asian American, 17% Spanish surname, 14% Black American, 13% foreign nationals and 3% native American Indian.

Academic Achievement

The majority of first-year students enrolled in 1979-80 carried four or more years of college background with them. More than two-thirds, 73% or 866 students, of the entering class had four or more years of prior college work and 65% (763 students) had a baccalaureate or higher degree. These represented increases of 5% and 1%, respectively, over the previous year, where 70% (819 students) had four or more years of college and 64% (752 students) had a baccalaureate or higher degree.

Of the remaining first-year students, 7% had 2+ years of prior college work and 19% had 3+ years.

The mean grade point average for entering students in 1979-80 was 3.31. This was up from 3.295 in 1978-79. Twelve of the thirteen institutions achieved a mean grade point average of 3.0 or better, and ten of the institutions achieved a mean GPA of 3.25 or better. These grade point averages are based on a total of 1,167 entering students reported in *Information for Applicants to Schools and Colleges of Optometry*, Fall 1981, published by the American Optometric Association in cooperation with the Association of Schools and Colleges of Optometry.*

Financial Aid

The amount of aid granted through institutions other than loans** for the academic year 1979-80 was $1,437,383. Of this amount, $347,719 or 24% was from federal sources and $563,130 (39%) was from state governmental agencies. The total amount of aid excluding loans increased by 46% over the 1978-79 figure of $983,041. While the federal share of aid excluding loans increased by 67% over 1978-79, the state share decreased by 21%. This was the reverse of the previous year's report where the federal share had decreased by 7.6% and the state share had increased by more than 100% (106.4%).

The total amount of loans granted through institutions in 1979-80 was $9,681,717. Of this, $3,868,912 or 40% was from the federal government. These represented increases of 78.5% over the total amount of $5,423,456 and a 78% increase over the federal share of $2,168,334 in 1978-79.

In all, the amount of financial aid granted through institutions for loans, scholarships, fellowships, grants in aid, etc. in 1978-80 amounted to more than $11 million.

Student Expenditures

The average expenditure of regularly enrolled students for tuition, fees, books, supplies, etc. for the academic year 1979-80 ranged from $1,475 to $5,720 for residents and $3,077 to $9,720 for non-residents. If no distinction was made between residents and non-residents at a given institution, expenditures were reported in the non-resident column only. The mean average expenditure for costs excluding living expenses totaled $3,243 for residents and $5,428 for non-residents.

The average room and board expenditures for 1979-80 ranged from $1,550 to $4,450. These figures were based on amounts spent if school dormitories were available, otherwise, the costs were estimated for a single student. The mean average expenditure for living costs was $2,534 for the year.

The overall mean average cost of education for optometric students for 1979-80 was $5,777 for residents and $7,962 for non-residents. □

Information for Applicants to Schools and Colleges of Optometry, Fall, 1981. St. Louis, Missouri: American Optometric Association. No explanation can be given for the discrepancy in numbers of first-year students reported in this booklet and the COE *Annual Survey of Optometric Educational Institutions*.

**Includes scholarships, fellowships, grants in aid, etc.

The following abbreviations have been used in the accompanying tables.

Schools

FSC	— Ferris State College
ICO	— Illinois College of Optometry
IU	— Indiana University
NECO	— New England College of Optometry
PU	— Pacific University
PCO	— Pennsylvania College of Optometry
SCCO	— Southern California College of Optometry
SCO	— Southern College of Optometry
SUNY	— State University of New York

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Abbreviations *(continued)*

TOSU — The Ohio State University
UAB — University of Alabama in Birmingham
UCB — University of California, Berkeley
UH — University of Houston

Provinces and Territories

CZ — Canal Zone
PR — Puerto Rico
USP — U.S. Possessions
ALB — Alberta
BC — British Columbia
MAN — Manitoba
NB — New Brunswick
NF — Newfoundland
NS — Nova Scotia
ONT — Ontario
PEI — Prince Edward Island
QUE — Quebec
SAS — Saskatchewan
CAN. TER. — Canadian Territories
O. COUN. — Other Countries

Profile of 1979 Entering Class

Grade Point Averages (4.0 Scale)

	High	Low	Mean	Number of Students
FSC	N/A	N/A	3.45	32
ICO	N/A	N/A	3.30	155
IU	N/A	N/A	3.58	69
NECO	3.90	2.50	3.19	87
PCO	3.94	2.53	3.18	150
PU	4.0	2.81	3.36	85
SCCO	4.00	2.70	3.32	96
SCO	3.95	2.18	2.90	150
SUNY	3.90	2.70	3.27	68
TOSU	4.00	2.92	3.46	60
UAB	4.00	2.58	3.36	40
UCB	4.00	2.23	3.35	71
UH	4.0	2.7	3.36	104
Total			3.31	1,167

SOURCE: *Information for Applicants to Schools and Colleges of Optometry, Fall, 1981.* St. Louis, Mo.: American Optometric Association, n.d.

N/A—Not Available

1979-80 Annual Survey of Optometric Educational Institutions
Student Enrollments

Number of First Year Students Enrolled With:

	2+ Yrs.	3+ Yrs.	4+ Yrs.	B.A., B.S.	M.A., M.S.	Ph.D.	Total
FSC	8	6	2	16			32
ICO	5	31	14	104	1		155
IU	18	20		29	2		69
NECO			8	79		9	96
PCO		22		123	6	1	152
PU	14	26	12	32	1		85
SCCO	9	15	5	62	5		96
SCO	21	25	13	89	2		150
SUNY		5		55	8		68
TOSU	11	26	3	20			60
UAB		5		33	2		40
UCB		33		35	3		71
UH		13	46	42	4		105
U.S. TOTALS	86	227	103	719	34	10	1,179

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1979-80 Annual Survey of Optometric Educational Institutions
Student Enrollment

Full-Time Students Enrolled in the Professional Degree Program

	First Year		Second Year		Third Year		Fourth Year		TOTALS		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
FSC	23	9	27	4	22	3	20	2	92	18	110
ICO	128	31	132	22	118	20	130	15	508	88	596
IU	48	22	46	21	44	18	46	17	184	78	262
NECO	72	24	64	24	64	19	76	19	276	86	362
PCO	124	28	115	29	126	23	115	26	480	106	586
PU	67	19	66	17	61	21	63	13	257	70	327
SCCO	71	25	72	19	71	21	80	12	294	77	371
SCO	128	23	132	7	143	6	131	12	534	48	582
SUNY	47	21	48	20	35	25	41	12	171	78	249
TOSU	47	13	47	14	50	9	46	7	190	43	233
UAB	30	10	32	7	28	13	27	4	117	34	151
UCB	52	19	53	18	49	12	50	13	204	62	266
UH	77	27	86	21	80	18	82	14	325	80	405
U.S. TOTALS	914	271	920	223	891	208	907	166	3,632	868	4,500

1979-80 Annual Survey of Optometric Educational Institutions
Student Enrollment

Minority Group Students Enrolled

	Black American		Spanish Surname		Native American Ind.		Asian Amer.		Foreign Nationals		TOTALS			% of Student body
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total	
FSC	1						1				2		2	1.82
ICO		4	2				18	5	2		22	9	31	5.20
IU		10	1	2		2	2	2	4	1	7	17	24	9.16
NECO	2	1	1	1			2		7	2	12	4	16	4.42
PCO	1	7	3	5			5	6	4		13	18	31	5.29
PU			2	1	3		22	13	1	2	28	16	44	13.46
SCCO	4		9	4	3		24	15	1	2	41	21	62	16.71
SCO	5						7			1	12	1	13	2.23
SUNY	1		1	1	1		8	7	2		13	8	21	8.43
TOSU		2	1				1				2	2	4	1.72
UAB	3	4						1			3	5	8	5.30
UCB	2	5	13	2	1		40	20	1	1	57	28	85	31.95
UH	3	1	14	4	3		4	5	14	6	38	16	54	13.33
U.S. TOTALS	22	34	47	20	11	2	134	74	36	15	250	145	395	8.78

1979-80 Annual Survey of Optometric Educational Institutions
Students

	Financial Aid Granted through Institutions Excluding Loans							Student Loans Granted through Institutions					
	Percentage of Students Receiving Aid				Amount			Percentage of Students Receiving Loans				Amount	
	1st Year	2nd Year	3rd Year	4th Year	Total	Federal	State	1st Year	2nd Year	3rd Year	4th Year	Total	Amount
FSC	7	8	9	10	$ 23,400	$ 9,214	$ 13,086	14	14	15	10	$ 117,480	$ 46,770
ICO	3	2	2	1	95,115	71,145	16,717	65	44	76	61	1,828,314	256,550
IU	1	1	1	1	9,000	1,000	8,000	35	35	35	40	160,000	155,000
NECO	9	11	17	12	44,400	9,900	15,500	63	73	57	42	1,068,666	276,696
PCO	3	5	0	1	13,910	2,260	4,300	80	90	72	64	2,829,252	567,249
PU	31	47	48	39	399,177	18,000	381,177	49	49	49	49	739,554	139,400
SCCO	69	57	63	58	515,956	104,056	31,350	77	69	69	66	1,310,241	1,310,241
SCO	0	0	0	0				33	39	36	23	507,050	507,050
SUNY	10	10	10	10	101,000		31,000	75	60	50	50	250,000	60,000
TOSU	30	25	22	17	41,200	4,719		27	25	24	26	121,350	121,350
UAB	10	9	3	0	24,225	7,425	12,000	73	66	75	85	451,861	181,540
UCB	0	0	0	0				19	13	38	34	97,949	87,066
UH	35	35	35	35	170,000	120,000	50,000	20	20	20	20	200,000	160,000
U.S. TOTALS					$1,437,383	$347,719	$563,130					$9,681,717	$3,868,912

1979-80 Annual Survey of Optometric Educational Institutions
Students

Annual Student Expenditures[a]

	Resident Expenditures[b]					Non-Resident Expenditures					Average Room & Board Expenditures[c]
	1st Year	2nd Year	3rd Year	4th Year	Average	1st Year	2nd Year	3rd Year	4th Year	Average	
FSC	2,873	2,655	2,388	2,840	2,689	N/A	N/A	N/A	N/A	N/A	1,862
ICO						6,350	5,650	5,550	5,350	5,725	2,523
IU	2,490	3,676	2,727	2,325	2,805	4,310	5,340	4,495	3,885	4,508	1,550
NECO						4,760	4,370	4,340	4,210	4,420	4,000
PCO					5,720[d]					9,720[d]	4,450
PU						5,850	5,150	5,350	4,850	5,300	1,700
SCCO						6,501	5,699	5,567	5,237	5,751	3,242
SCO	4,900	4,389	4,230	2,610	4,032[e]	8,650	8,139	7,980	6,360	7,782[e]	2,728
SUNY	3,750	3,850	3,950	3,850	3,850	5,200	5,300	5,400	5,300	5,300	2,880
TOSU	4,500	4,500	4,500	4,500	4,500	6,150	6,150	6,150	6,150	6,150	1,899
UAB	2,278	2,878	1,776	1,775	2,177	3,178	3,778	2,676	2,675	3,077	2,194
UCB	1,100	2,500	1,100	1,200	1,475	3,500	4,900	3,500	3,600	3,875	2,035
UH	5,158	800	800	1,008	1,942	6,454	2,044	2,044	3,556	3,524	1,876

[a]Average expenditure of regularly enrolled students for the current year. Includes tuition, fees, instruments, supplies, textbooks, etc.

[b]If no distinction is made between resident and non-resident students, only the non-resident column was used.

[c]If school dormitories are available, this price is used for room and board; otherwise costs are estimated for a single student.

[d]Average expenditure for contract vs. non-contract students, respectively, for college fees and other costs (excluding living expenses).

[e]Regional vs. non-regional expenditures, respectively.

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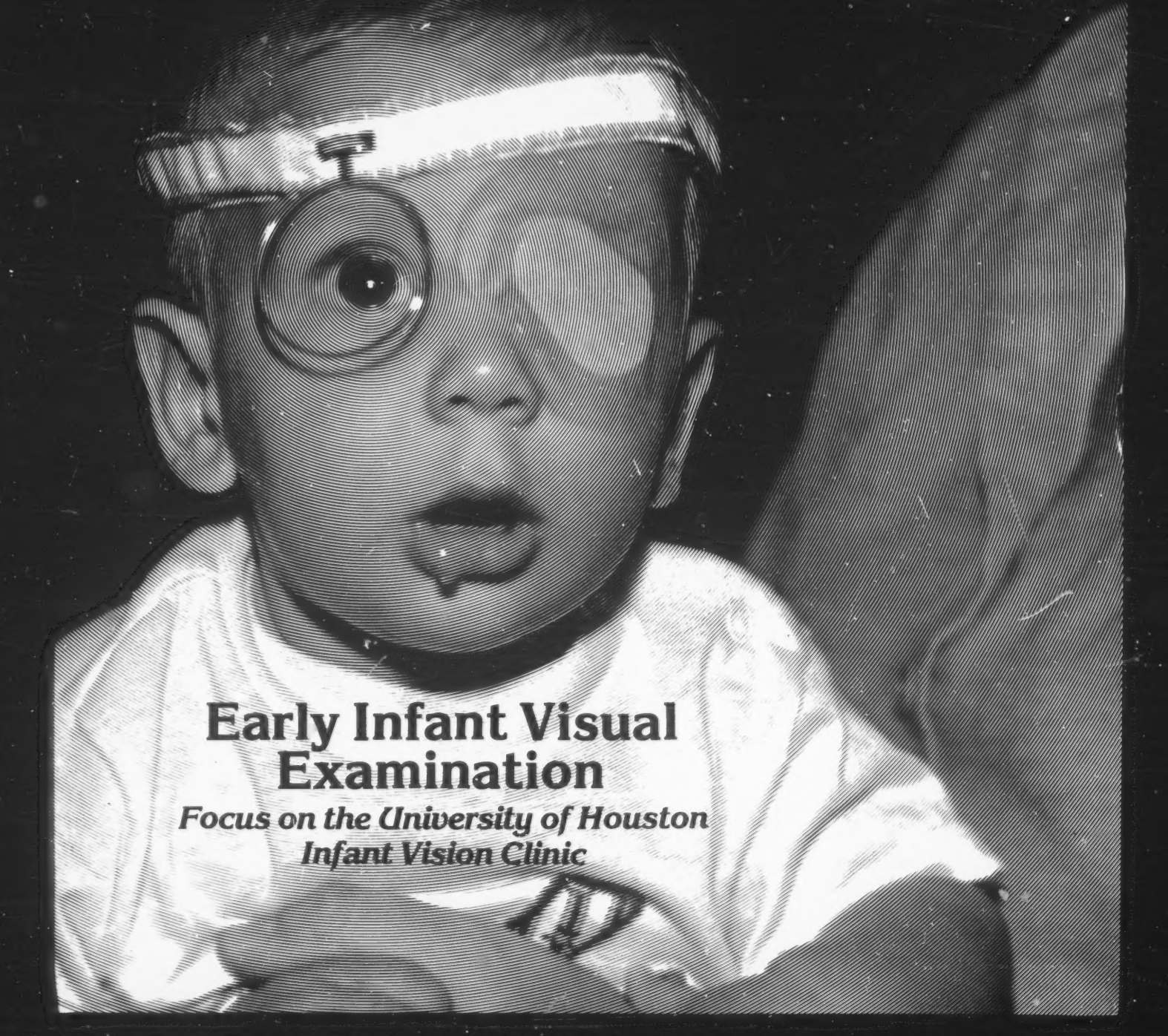

Early Infant Visual Examination

Focus on the University of Houston Infant Vision Clinic

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1979-80 Annual Survey of Optometric Educational Institutions

Permanent Residence

Totals

	FSC	ICO	IU	NECO	PCO	PU	SCCO	SCO	SUNY	TOSU	UAB	UC	UH	U.S. TOTAL
AL			1					1			93			95
AK						4	2					1		7
AZ		1		1		9	19	1						31
AR				1	1		1	37					20	60
CA		29	5	7	8	34	118	7	1			234		443
CO				1	1	20	15	4				2		43
CT		3	1	42	9	1	2	1						59
DE					8		1	4						13
DC					2							1		3
FL		13	5	11	9	4	7	60	1				23	133
GA		1	1	3	1			44			12			62
HI		4		1	2	20	12					3		42
ID		1				12	6					1		20
IL		172	12	2	1	2	1	5				1		196
IN		7	159	1			2	3						172
IA		48	6			7	13	4						78
KS		2				1	2	16					21	42
KY			1					31			8		18	58
LA							1	27			3		34	65
ME				31	8			3						42
MD		10	1	5	44		1	20			8	1	4	94
MA		4	2	117	2			3	2					130
MI	110	60	5	2	2	2	3	7				2		193
MN		15	3	2	1	17	15	2		4				59
MS			1					27			3		7	38
MO		12	7	1		2	12	6						40
MT						17	18							35
NE		4	2	1		6	7	11		8			18	57
NV					1	6	13	1				1		22
NH		2		11	2			1						16
NJ		2	3	17	79		1	6	3			2		113
NM		2	1			6	13						13	35
NY		72	6	51	64	9	2	6	239			7		456
NC		2			38			55			8		9	112
ND		4				14	7			4				29
OH		23	3	3	9	1	1	5		215		3		263
OF		1	2			2	5	34					24	68
OR						43	6					1		50
PA		22	4	10	235		2	6	2					281
RI		1	1	18	2			1						23
SC		1		1				30			7			39
SD		10	1	1		7	8							27
TN		1	1	1				72						75
TX		2						1					193	196
UT		2				13	14	1						30
VT				6			1	1						8
VA			2		36		1	12			9			60
WA		1		1		46	11	1				1		61
WV		9		1	12			19		2				43
WI		52	21	3	1	10	14	4				3		108
WY						6	11	1						18
CZ														
PR				1	6		1						1	9
USP							1							1
ALB						2								2
BC						1								1
MAN														
NB														
NF				1										1
NS														
ONT													1	1
PEI														
QUE				3										3
SAS														
CAN TER														
O COUN		1	5	4	4	3	1	1	1			2	19	41
TOTAL	110	596	262	362	588	327	371	582	249	233	151	266	405	4502

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JOURNAL OF OPTOMETRIC EDUCATION

Volume 6, Number 3
Winter, 1981

A Special UAB Study

Rural Optometry

The Need for a Different Approach

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ISSN 0098-6917

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This issue contains the reader survey announced in our fall issue. Please fill out the questionnaire in the center section and mail it to our office by *April 30, 1981*. Returns will be kept strictly confidential and will provide us with valuable data for meeting readers' needs and informing prospective advertisers. No postage is necessary. Results will be published in an upcoming issue.

Thank you for your assistance.

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An Analysis of Optometric Practices in Rural Alabama

Bradford W. Wild, O.D., Ph.D., and
Richard Maisiak, Ph.D.

The following report is based on a selection of findings from a larger study whose purposes were to determine what type of curriculum is needed for students planning rural optometric practices. A total of twenty-nine Alabama optometric practices were studied using a three part research plan involving an optometrist survey, a one week patient flow analysis, and an audit of patient records. The results indicated that there were some special facets of the rural practices which may require a different type of educational preparation.

Introduction

One of the recent approaches to curriculum development at the School of Optometry at the University of Alabama in Birmingham involved the identification of some of the characteristics of current optometric practices in rural areas of Alabama. Once these have been identified, it should be possible to determine the educational and professional needs of these practitioners and to evaluate the adequacy of the optometric curriculum at the School of Optometry in meeting the needs of such practitioners.

The Bureau of Health Manpower established as a goal for its Special Project Grant Program under the Health Manpower Training Act of 1971[1] the following priority:

> Meet the increased demand for access to primary care by (a) increasing the number of graduates of optometric training serving in underserved areas; (b) devising, demonstrating and evaluating improved methods for training in a variety of clinical settings, with special emphasis on improving the geographical distribution of optometric services.

The School of Optometry submitted a grant application directed to meet this goal. The grant was initially funded in 1976 and was subsequently continued until the project was completed in late 1979. This report is a summary of a portion of the study which was conducted under the auspices of that grant.

Rationale

The National Study of Optometric Education[2] conducted under the direction of Dr. Robert J. Havighurst reported in 1973 that only 15 percent of optometry students expressed a preference to practice in communities having populations of 10,000 or less. A similar preference was confirmed among students at the School of Optometry of the University of Alabama in Birmingham Since the state of Alabama has one of the smallest number of optometrists for its population of any geographical region in the nation, this predilection of new graduates to locate their practices in other than rural areas seemed to indicate that the rural areas will continue to be underserved for many years into the future.[3,4]

The current curriculum of the School of Optometry is organized to make use of the training programs of the other health professions on campus. The basic science courses are taught by the faculty of the basic science departments. These faculty members also teach the students in the Schools of Dentistry, Medicine, Nursing and in some cases, the School of Community and Allied Health Resources. Wherever feasible, within the constraints of the available facilities, schedules, and course content, these courses are offered jointly for students in two or more schools. Often such courses are common for only a portion of the academic quarter after which they are taught independently with an emphasis that is appropriate for the subject matter of that professional school.

The clinical training program of the School of Optometry is conducted in a variety of settings. The clinical settings are organized to deal with patients who have specific types of health disorders,

Bradford W. Wild, O.D., Ph.D., is associate dean of the School of Optometry, University of Alabama in Birmingham. At the time of the study, Dr. Wild was director of the project. Richard Maisiak, Ph.D., is senior evaluator for the Office of Educational Development, School of Medicine, University of Alabama in Birmingham.

This study was supported by Special Projects Grant No. 04-D-001443-01-0, Bureau of Health Manpower, Health Resources Administration, U.S. Public Health Service, Department of Health, Education and Welfare, to the School of Optometry, University of Alabama in Birmingham.

such as the Center for Developmental and Learning Disorders, which deals primarily with exceptional children; the Diabetes Research Education Hospital, which deals with suspected or diagnosed diabetic patients; and the Low Vision Rehabilitation Clinic, which deals with blind or partially sighted patients. In addition, there is one clinical rotation that deals with a specific population, the Veterans Administration Optometry Clinic. All of these clinical programs augment the basic clinical program which takes place in the Primary Care Clinic of the School of Optometry. The Primary Care Clinic is organized to duplicate, insofar as possible, the conditions that are apt to be encountered in a private, general practice. It assumes the ready availability of a wide variety of health resources for consultation purposes. In other words, it recognizes the unique opportunities provided within the Medical Center and capitalizes on their availability to provide a unique learning experience.

A corollary to the type of training that is provided in the School of Optometry is that the optometry graduates tend to establish practices that are based on the types of training that have been provided within the academic setting. In other words, the unique opportunities that are available at the Medical Center of the University of Alabama in Birmingham indirectly and not by design, foster an attitude of interdependency with other health care professionals. The optometry graduates are, by this indirection, being trained for urban and suburban practice and are being directed subtly and unintentionally away from rural practice. The role of the optometrist in the rural South is often very different from that of his urban colleague. Since he is ordinarily the only eye care practitioner in the area, the optometrist functions as the primary provider of eye care. In addition, he by necessity, is required to make the initial assessment of the patient's overall health problems, attempts to solve as many of these problems as possible, consults with other health care practitioners as appropriate, provides optometric services and, since there are ordinarily no opticians in the area, provides whatever ophthalmic materials may be required. The rural optometrist operates as an independent, solo practitioner. He is geographically and professionally isolated. His concept of the team approach to providing eye care is characteristically based on sending patients many miles for consultation to the appropriate practitioner or medical center. Consultations are inconvenient, costly and often involve delays caused by the patient's inability to arrange personal or work schedules or transportation. In some instances the patient may never receive the benefits of the appropriate health care professional. Consultations should be made accurately, based upon proper diagnosis, and consonant with the perceived need for speed.

As an aid in making appropriate consultation the University of Alabama in Birmingham, through its Office of Health Extension, Public Service and Research, has instituted a special service to health care providers called Medical Information Service via Telephone (MIST).[5] A health care practitioner can call the MIST telephone number and receive direct telephone consultation with faculty members who have special knowledge in the area of concern. Currently there are 21 faculty members from the School of Optometry and the Department of Ophthalmology who actively participate in the program offering consultation in 17 areas of specialty. Any health care practitioner in the state of Alabama can avail himself of this service. During the fiscal year ending June 30, 1975, a total of 29,538 calls were handled under this program. The number of such calls has been increasing at a rate of approximately 30 percent per year. The MIST program is, and will continue to serve as, the connecting link between the rural health care practitioner and the faculty of the Medical Center.

Methods

Based upon the results of a sample survey of five optometric practices that was conducted during the summer of 1976, a protocol for the final study was developed. There were 43 practices identified as rural using the two criteria of being in communities having populations of less than 10,000 and being 40 miles or more away from or relatively inaccessible to a major metropolitan area. From this list of practices 25 were selected. They were representative of the different geographical areas of the state. The optometrists who were approached expressed interest in the study and willingness to cooperate in the data gathering phase of the project. In addition, four urban optometric practices were selected to be surveyed. All of these practices were located in either the central city or the suburbs of a large Alabama city. They were considered to be representative of urban practices in the area. A total of 40 optometrists were involved in the 29 individual and group practices that were surveyed.

Each practice was visited by a fourth year optometric student for one week. During that time the student conducted three different studies. The first involved

The role of the optometrist in the rural south is often very different from that of his urban counterpart. Since he is ordinarily the only eye care practitioner in the area, the optometrist functions as the primary provider of eye care.

the completion of the "Optometrist Questionnaire" by the rural practitioner. The questionnaire was used to gather information concerning the number of years of existence of the practice, the services available, health care availability, the methods of patient payment, and the educational opinions of the rural optometrists. The second study was the recording of information about the sample of patients visiting the office during the week. Data concerning the appointment status, reason for visit, date of visit, and the personnel seen were recorded for every patient entering the optometrist's office during a sample week. The third study was an audit of a sample of 300 or more randomly chosen optometric patient charts recorded over the previous ten years of service. A primary goal of the audit was to determine the frequency of various eye problems in the practice. The percentage (50%) of rural practices which were group practices was higher than the percentage (12%) of similar rural practices found in Kegel-Flom's[6] sample of rural practices.

Results and Discussion

Office Space

Data from all three surveys were tabulated. The means and percentages were calculated for both the rural and urban samples of optometry practices. The mean duration of existence of the rural practices was 17 years and the average size of the space was 1900 square feet. These figures were very similar to data from the survey of the urban practices.

The percentages of rural and urban practices with certain room types are presented in Table 1. The data indicate that the rural practices had the basic rooms necessary for a satisfactory optometric practice. All the rural and urban practitioners in the sample have at least one waiting room, a business office, at least one examination area, and at least one frame selection/dispensary room. The percentage (33%) of rural practices with a visual therapy room is low especially in comparison to the urban sample.

Instrumentation

Statistics concerning instruments are divided into two categories since some instruments can be shared easily by optometrists in group practices while other instruments are best allocated individually. The results are shown in Table 1. Some of the practitioners in both practice types were without a biomicroscope and many were without an indirect ophthalmoscope. As for shared instruments, almost all the practices had at least one tangent screen and a keratometer, and all the urban practices had low vision aids, visual therapy equipment, and a set of diagnostic contact lenses. Several of the rural offices were without a perimeter, a sphygmomanometer, low vision aids, visual therapy equipment, or a set of diagnostic contact lenses. Only one of the rural and urban offices was equipped with a gonioscope. These results suggest that rural practices may be more limited in the variety of services that are available than urban practices.

The distribution of the type of services reported to be available at both samples of urban and rural practices is presented in Table 2. Both samples reported having contact lens, dispensing, and occupational vision services available. Some of the practices also had low vision and orthokeratology services and only a few had aniseikonic services. The percentage of rural practices offering orthoptics and developmental vision services was much lower than the percentage of urban practices. The percentage of practices offering developmental vision and low vision services is higher in the present study than in Kegel-Flom's study.[6]

Special Educational Needs

Many rural practitioners felt that all graduating students may be deficient in practice management skills and, in view of the importance and need, also may

TABLE 1

Percentage of Optometry Practices with Various Rooms and Instruments

	Rural	Urban
Rooms:		
One waiting room	88	100
More than one waiting room	13	0
One business office	100	100
At least one laboratory	92	75
At least one visual therapy room	33	75
At least one operatory	100	100
At least one frame selection/dispensary room	100	100
Instruments (per optometrist):		
At least one phoropter	100	100
At least one biomicroscope	79	83
At least one tonometer	94	100
At least one ophthalmoscope	100	100
At least one indirect ophthalmoscope	65	17
Instruments (per practice):		
At least one tangent screen	88	100
At least one perimeter	54	75
At least one sphygmomanometer	88	75
At least one keratometer	100	100
Some low vision aids	63	100
Some visual training equipment	71	100
At least one set of diagnostic contact lens	75	100
At least one gonioscope	0	25

need additional training in the management of ocular emergencies and disease. These data (Table 3) correlate with the lack of availability of other health care in these rural areas. Although all the rural practitioners reported the presence of at least one physician in the rural area, only 13% reported the presence of a nearby ophthalmologist. The average reported distance to the nearest emergency eye care was 30 miles and the average reported distance to the nearest consulting ophthalmologist was 40 miles. The rural population was found to be more dependent on optometrists for emergency eye care than the urban population.

Patient Payment Methods

The results concerning patient payment methods taken from the questionnaire were not in accordance with general beliefs about rural practices. For instance, the distribution of reported patient payment methods for the rural practices was 58% for immediate cash, 13% for Medicaid, 2% for Medicare, 21% for delayed cash payment, and 5% for other. Except for a higher Medicaid percentage, the distribution was similar to the urban sample. These results conflict with the notion that the rural practitioners have a higher rate of delayed cash payments. The distribution of reported patient payment methods for the urban sample was 61% for immediate cash, 5% for Medicaid, 1% for Medicare, 31% for delayed cash payment, and 1% for other.

Patient Scheduling and Services

The percentage of patients (55%) without appointments in rural practices was higher than the percentage (40%) in urban practices, indicating the rural practices may have a less formal structure. The percentage of rural and urban patients with different primary reasons for visiting an optometric practice is presented in Table 4. The most frequent reported patient reasons for visiting both the rural and urban optometrists were comprehensive vision/eye examinations, frame adjustments, and spectacle dispensing. The rural practitioners tended to have fewer patients for contact lens services and visual therapy, and more patients for frame adjustments and ocular emergencies than urban practitioners. Other reasons for visits included payment and financial matters. These data support the previous indications that the rural practitioner is faced with more emergencies than his urban counterpart. The percentage of ocular emergency cases managed by optometrists or requiring consultation is presented in Table 5. The results indicate that more rural than urban optometrists managed emergencies themselves.

Personnel Utilization

In constructing Table 6, it was assumed that all patients would normally see the receptionist before any other personnel. Thus the "Optometrist Only," "Technician Only," and "Both Optometrist and Technician Only" categories automatically include the receptionist. Patients who saw the receptionist alone in both practices were arranging appointments and paying bills in person. The percentage of rural patients (28%) who saw the technician alone was lower than the percentage (36%) of urban patients who saw the technician alone. The rural practitioners appear not to delegate as much responsibility to assistants as urban practitioners. The percentage of patients who saw the "Optometric Technician Alone" for different reasons for both the rural and urban practices is presented in Table 7. A deeper analysis of the data indicated that the urban optometric technician performed 99% of the frame selections, 84% of the frame adjustments, and 77% of the spectacle dispensing while the rural optometric technician performed only 50% of the frame selection, only 60% of the frame adjustments, and only 48% of the spectacle

TABLE 2

Percentage of Optometry Practices with Various Services Available

	Rural	Urban
Contact lens	96	100
Orthoptics	63	100
Low Vision	50	50
Occupational Vision	79	75
Aniseikonia	25	0
Developmental Vision	33	100
Orthokeratology	42	50
Dispensing	100	100

TABLE 3

Distribution of Responses of Rural Optometrists to Two Questions Concerning Future Optometrists

In what areas of optometry do you feel today's graduating optometrists are deficient?	
Practice Management	52%
Mechanical Optics	38%
Emergency Care	24%
In what areas would you recommend a student planning a *rural practice* be most knowledgeable?	
Management of Ocular Emergencies/Disease	43%
Practice Management	24%
General Optometry	19%
Patient Communication	19%

TABLE 4

Percentage Distribution of Patients' Reasons for Visiting Rural and Urban Optometry Practices

	Rural	Urban
Comprehensive Vision/Eye Examination	34.6	34.6
Frame Selection	2.4	2.9
Frame Adjustment	20.3	15.3
Spectacle Dispensing	20.0	19.6
Contact Lens Delivery	1.4	7.8
Contact Lens Fit	2.0	8.6
Visual Therapy	0.1	0.5
Spectacle Replacement	2.7	2.7
Ocular Emergency	2.0	0.3
Other	14.5	7.8

TABLE 5

Percentage of Ocular Emergency Cases Managed by Rural and Urban Optometrists or Requiring Consultation

	Rural	Urban
Managed by Optometrist	64	44
Consultation Required	22	56
No Treatment Required	14	0

TABLE 6

Percentage Distribution of Personnel Seen by Optometric Patients

	Rural	Urban
Optometrist only	38	40
Technician only	28	36
Both Optometrist and Technician	33	17
Receptionist only	11	7

TABLE 7

Percentage of Patients Seeing the Optometric Technician Alone for Various Reasons for Rural and Urban Practices

	Rural	Urban
Comprehensive Vision/Eye Examination		
Frame Selection	51	99
Frame Adjustment	59	84
Spectacle Dispensing	48	77
Contact Lens Delivery	14	10
Contact Lens Fit	15	3
Visual Therapy	0	0
Spectacle Replacements	57	60
Ocular Emergency	2	0
Other	19	38

adjustments. Duties not performed by the technician are likely to be assumed by the optometrist.

Patient Records

A review of 9,715 patient records from 29 practices was made. The surveyors randomly sampled at least 300 patient records from each practice. The data were compiled for computer processing. The results are presented in figure 1. The distribution was bimodal, peaking at the ages of 15-17 and at the ages 46-50. Relatively few of the patients were between the ages of 32 and 39. The percentage (60%) of female rural patients was somewhat higher than the percentage (56%) of female urban patients. Only 36% of the records indicated the race of the patient. Eighty-eight percent of those records indicated white patients, and 12% indicated black. Since the percentage of blacks in both the rural and urban population areas is at least 25%, the results suggest that a low percentage of blacks is receiving full primary eye care. The percentage of rural patients under a physician's care at the time of optometric service was 28% and the percentage of urban patients under physician's care at the time that the patient received optometric services was 20%. These results indicate that rural optometrists may need to be especially sensitive to their patients' overall health needs.

A higher percentage of rural patients who were under a physician's care had hypertension (45%) or diabetes (11%) than the percentage of similar urban patients with hypertension (32%) and diabetes (7%). The most common complaints for both the rural and urban patients were the following: progress check (24%), blur at near (17%), blur at distance (9%), blur at distance and near (8%), headaches (6%), and burning, itching, and tearing (5%). The distribution of refractive error types was similar for both the urban and rural practices. The most frequent type of refractive error was hyperopic astigmatism with presbyopia and the least frequent type was myopic presbyopia. The percentage (18%) of rural patients with eye disease was significantly higher than the percentage (9%) of urban patients with eye disease. These results tend to support other findings of health care problems in rural areas. The distribution of

TABLE 8

Percentage Distribution of Rural and Urban Patients with Different Disease Types

	Rural	Urban
Ocular	66	37
Systemic	25	58
Neurological	1	1
Combination	8	4

rural and urban patients with different disease types is presented in Table 8. The results indicate that the majority of rural disease cases were ocular while the majority of urban cases were systemic.

Conclusions

Some of the major findings of this study are:

1. The amount of office space available in rural and urban practices was similar.
2. The variety of instruments was less in rural practices than in the urban practices.
3. The average rural practitioner offered fewer specialty services than did the average urban practitioner.
4. Since the rural practices tended to be located far away from ophthalmologists or emergency eye care facilities, the rural optometrist tended to perform more ocular emergency services than the urban optometrist.
5. Methods of payment for services and materials were similar in both rural and urban practices.
6. Optometrists in rural practices saw fewer contact lens patients than optometrists in urban practices.
7. Optometrists in rural practices saw more emergency eye care patients than optometrists in urban practices.
8. Optometrists in rural practices tended to have the optometric technicians perform more office duties and fewer patient care duties than their urban counterparts.
9. It was suggested by optometrists already practicing in rural areas that optometry students who are planning to practice in rural areas should receive additional training in practice management, ocular emergencies, and ocular disease diagnosis and management.

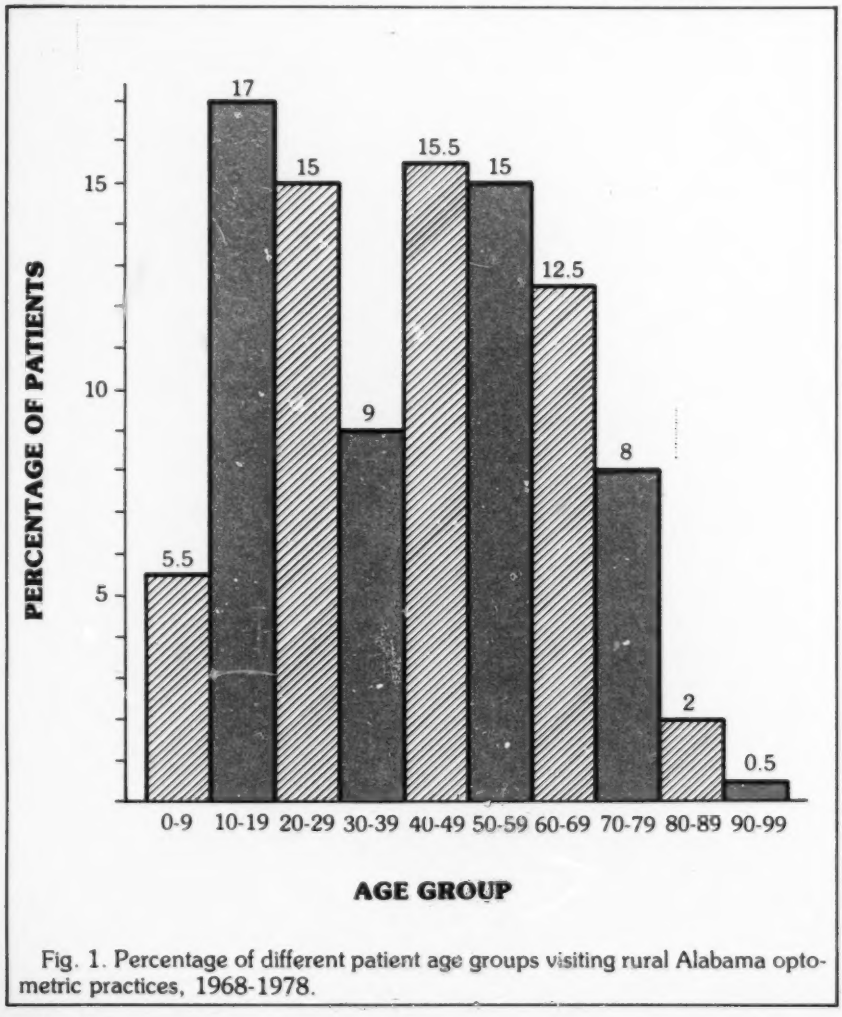

Fig. 1. Percentage of different patient age groups visiting rural Alabama optometric practices, 1968-1978.

Acknowledgment

The authors wish to acknowledge the assistance of G. Rudolph Golson, O.D., program coordinator, for his invaluable assistance in organizing, coordinating, and compiling material for the grant. Without the leadership of Dr. Golson, the accomplishments under this study would have been materially less. □

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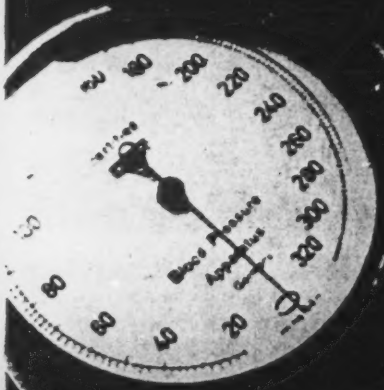
HYPERTENSION CURRICULUM IN SCHOOLS AND COLLEGES OF OPTOMETRY



Also:

Binocular Vision by Mini Computer □ Vocational Interests of Optometry Students
Profile of the Vision Educational Foundation

ISSN 0098-6917

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A Survey of Hypertension Curriculum in Schools and Colleges of Optometry 8
John C. Whitener, O.D., M.P.H.

In recognition of May as National High Blood Pressure month, JOE is pleased to publish this survey of current hypertension curriculum in schools and colleges of optometry.

Graphical and Normative Analysis of Binocular Vision by Mini Computer: A Teaching Aid and Clinical Tool 12
Clifton Schor, O.D., Ph.D., and Martin Kees, O.D.

An inexpensive computer graphics system was used as a video aid to teach eighty students advanced case analysis. The authors describe the structure of the program and the response received from the students.

The Vocational Interests of a Sample of Optometry Students 17
Robert C. Emling, Ed.D., J. Paul Crippan, B.A., John J. Crozier, O.D., Lawrence H. McClure, M.A., and Paul A. Green, M.A.

Results of a testing of optometry students on the Strong-Campbell Interest Inventory indicate profiles unlike those of professional elders and a strong desire for adventure and challenge in their chosen career.

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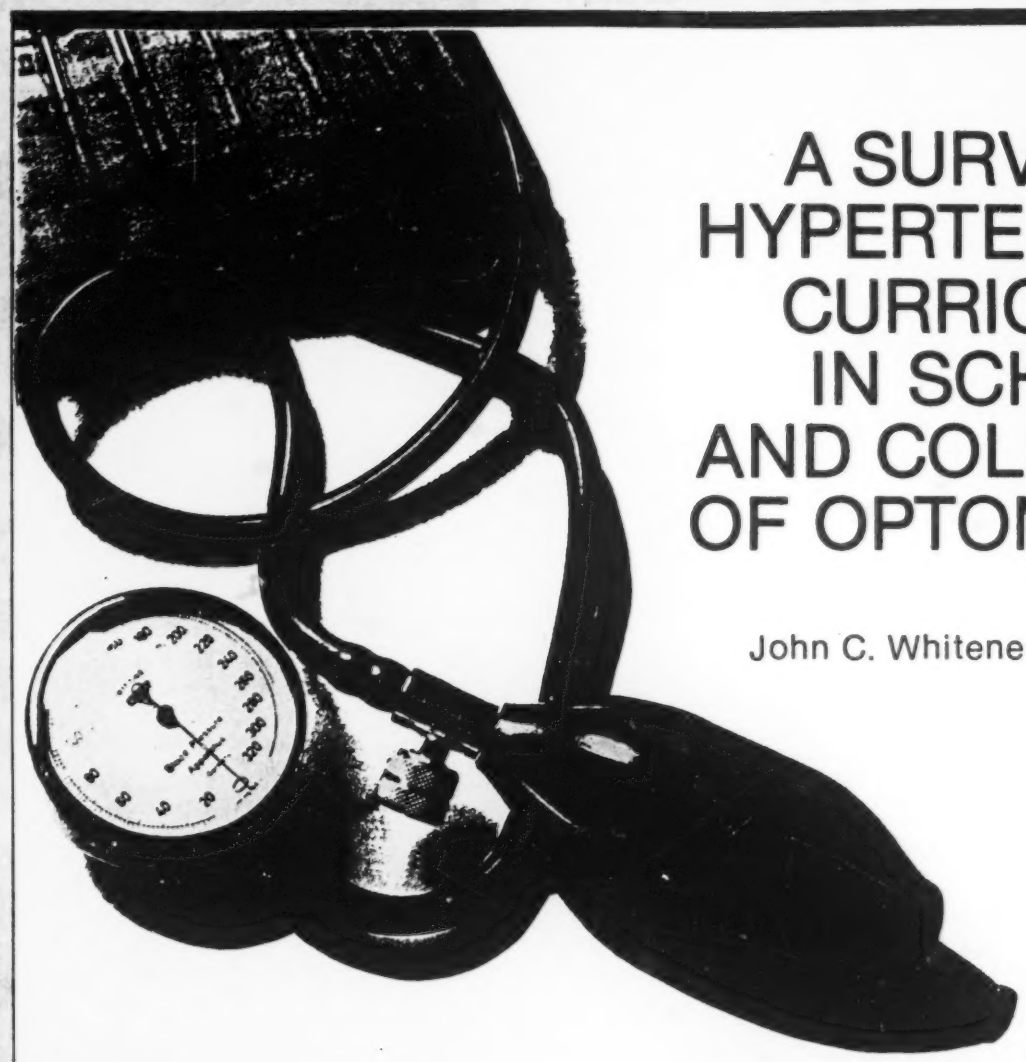

A SURVEY OF HYPERTENSION CURRICULUM IN SCHOOLS AND COLLEGES OF OPTOMETRY

John C. Whitener, O.D., M.P.H.

Hypertension, one of the most chronic diseases in the United States today, is a contributing factor in the deaths of at least 250,000 Americans each year.[1,2]

Approximately one out of six Americans has high blood pressure that merits treatment. It is estimated that another twenty-five million have borderline high blood pressure that requires surveillance. Hypertension is the greatest risk factor contributing to stroke, heart disease and kidney failure.[3] *One in four Black Americans has uncontrolled hypertension, representing the number one health problem for this group.*[4] *For persons over 65 years of age, approximately 40 percent of the white population and more than 50 percent of the black population have hypertension.*[5]

In spite of the high prevalence of hypertension in the population, many are unaware of its presence; others under treatment do not fully comply with an appropriate control regime. That is unfortunate, because hypertension is one of the few chronic conditions that can be effectively treated.[6]

Optometry, as a primary eye/vision care provider, serves as a valuable resource in providing detection, education, referral and follow-up services for patients with high blood pressure. According to Robert Levy, M.D., Director of the National Heart, Lung and Blood Institute, "Participation in high blood pressure control activities is a meaningful extension of the optometrist's function. For many persons, the optometrist serves as an important contact point with [sic] the health care system."[7]

In recognition of the importance of high blood pressure measurement by optometrists, the American Optometric Association (AOA) House of Delegates adopted Resolution 20 in 1975 which encouraged optometrists to measure the blood pressure of their patients. Management guidelines for screening for high blood pressure were subsequently developed.[8] The 1980 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure *published by the National Heart, Lung and Blood Institute gives an updated, comprehensive consensus by health professionals of recommendations for the detection, confirmation, and referral of patients.*[9]

High Blood Pressure Screening in Optometric Offices

A national panel of 500 optometrists geographically distributed to reflect regional attitudes was surveyed in 1977 concerning screening procedures for hypertension.[10] The results showed that 45 percent of the optometrists perform sphygmomanometry while another 12 percent plan to add this test to their standard exam. Table 1 indicates those optometrists who perform sphygmomanometry according to the age category of the patients.

In addition, preliminary results of a 1980 national AOA membership pool indicated that 56 percent of optometrists take high blood pressure measurements in their office.[11] No further questions were asked in this survey pertaining to high blood pressure screening in the optometrist's office or clinic.

A 1977 Survey of Dentists by the American Dental Association reports that 6.4 percent of all dentists take blood pressure measurements on all adult patients.[12] This can be compared to the 1977 national optometry panel results (Table 1), which indicate that from 5.6 to 27.6 percent of all optometrists take blood pressure measurements for adults over age 18.

The National High Blood Pressure Education Program recommends that blood pressure measurements be made on all adults over age 18. Under the age of 18 years there is no agreement as to the norm for high blood pressure.

The 1980 Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure recommends that health care professionals in all specialities measure blood pressure at each patient visit.[9] Data from the National Ambulatory Medical Care Survey for 1979, indicates that ophthalmologists take blood pressure measurements on 0.6 percent of all patient visits and 0.9 percent of all patient visits of patients over 45 years.[13] That ophthalmologists only take high blood pressure measurements on a very small percentage of their patients can possibly be attributed to the expected concentration on secondary and tertiary health care by many ophthalmologists. The high percentage of optometrists performing blood pressure measurements is in keeping with optometry's provision of primary care services.

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At least two sphygmomanometry readings are taken by 21 percent of the national panel of optometrists surveyed in 1977, while 11 percent take three and 2 percent take four or more readings. Only one reading is taken by 9 percent of those surveyed.[10] According to the National High Blood Pressure Coordinating Committee the average pressure should be recorded as the value for the patient after taking two or more measurements.[9]

The percentage of those optometrists surveyed in 1977 using various measurement devices revealed that 32 percent use the aneroid device, 8 percent use the mercury device, 3 percent use an electronic device, 1 percent use another device, and 1 percent did not indicate the type device that they use.[10]

TABLE 1
Percent of Optometrists Who Perform Sphygmomanometry

Age of Patient	Percent
Under 18 years	0.4
19-24 years	5.6
25-35 years	11.2
36-45 years	21.2
45 and over	27.6
All ages	8.8

SOURCE: Guerrein, R.L. "Who's Screening for What—And Who Should Be!" *Opt. J. Rev. Optom.* 114(9): 69, 1977.

Report of the Interdisciplinary Task Force

The Subcommittee on the Report of the Interdisciplinary Task Force on Provider Roles (ITFPR) of the National High Blood Pressure Coordinating Committee recommends to professional schools the following:

> Recognizing the autonomous nature of professional schools in determining the content of curriculum, the Coordinating Comittee suggests that:
>
> (1A) student professionals be exposed to principals about the patient's role in hypertension control;
> (1B) principles supportive of interdisciplinary cooperation be conveyed to student professionals;
> (1D) any professional school which lacks such programs design a basic clinical practicum to prepare students in that discipline for the "real world" complexities of health care delivery.
>
> Recognizing that many professional schools are already involved in teaching a core curriculum related to high blood pressure and are exposing their students to experience in clinical practice wherein they encounter interdisciplinary cooperation, the Coordinating Committee reminds them of the desirability of:
>
> (1E) identifying core elements of curriculum related to hypertension to be taught to students in all disciplines;
> (1G) making available clinical practice opportunities to reinforce interdisciplinary team concepts taught in professional schools.[14]

Student exposure to hypertension screening is one of the many benefits of multidisciplinary clinical training for optometry students. The sharing of knowledge and skills among health care providers cannot result in less than an increase in the quality of care of services. Furthermore, the increase of awareness of professional competencies should help to remove the barriers to interdisciplinary cooperation. Schools should consider providing students with opportunities for exposure to didactic and practical interprofessional cooperation.

Hypertension Curriculum in Optometry Schools and Colleges

In December, 1980, a questionnaire was sent to 17 schools and colleges of optometry in the United States and Canada requesting information about high blood pressure training of students. Inter-American University in Puerto Rico which began operation in January, 1981, was not included in the survey. By March, 1981, 100 percent of the schools had responded. Two of the optometry schools, the University of Montreal and the University of Missouri-St. Louis, currently do not have high blood pressure training in their curricula; thus the data are derived from the remaining 15 schools and colleges.

Eighty-eight percent of the schools and colleges of optometry provide training in blood pressure measurement with the majority of schools offering lectures and lab hours during the first year of optometry school (see Table 2). The third professional school year is the next most frequently chosen for hypertension lectures and the second year for lab courses.

As Table 2 indicates, most of the clinical training in hypertension in the schools takes place during the third and fourth years. In the third year the hours range from 3 to 20 hours, and in the fourth the hours range from 2 to 20. Several schools indicated that the blood pressure measurement is only one part of a block of subjects in the category of

TABLE 2
Curriculum Hours for Training in Blood Pressure Measurement

	Lecture		Seminar, Lab or Workshop		Clinic	
	Hours	N	Hours	N	Hours	N
First year	1.7	11	2.9	11	0	0
Second year	2.1	4	2.7	9	1.5	2
Third year	2.4	7	5.0	2	8.3	6
Fourth year	4.0	1	12.0	1	10.7	6

TABLE 3
Curriculum Hours for Training in Management of Hypertensive Patients

	Lecture		Seminar, Lab or Workshop		Clinic	
	Hours	N	Hours	N	Hours	N
First year	1.1	4	2	1	0	0
Second year	4.1	8	1.5	2	0	0
Third year	3.3	8	2	1	4	2
Fourth year	1.8	5	1.5	2	6	2

primary care optometry taught in the clinic.

The second question in the survey was, "How many hours in your curriculum are devoted to specific training in patient management of hypertension?" The data in Table 3 indicate that most schools provide didactic hours in patient management of hypertension in the second and third professional years for an average of three to four hours. Only two schools indicated clinic time devoted to hypertension management training, which is given in the third and fourth years.

Question three in the survey asked the type of blood pressure measurement device used in student training. All the schools use the mercury device. Eleven schools also use the aneroid and six use electronic instruments.

Eighty percent of the schools reported that blood pressure measurements are taken on patients of all ages; however, 40 percent of those schools also indicated that measurements are made on adults of all ages only when signs, symptoms or case history is indicative of high blood pressure. One school indicated that blood pressure measurement is taken on all patients 13 years and older.

Regarding the referral of patients with suspected hypertension, all 15 schools refer patients to family physicians. In addition, one school refers patients to a hypertension clinic, while another school refers patients to the general outpatient clinic of a hospital, an ocular disease clinic, social service agency, or an internist.

Conclusions

The majority (88 percent) of the schools and colleges of optometry in the United States and Canada has incorporated specific training in the measurement of blood pressure, as well as in the management of hypertensive patients, in their curricula. The training of optometry students by the schools and colleges, along with the American Optometric Association's encouragement of its members to measure blood pressure, indicates a commitment on the part of the profession to actively participate in detection, education, referral and follow-up services for patients with high blood pressure. As a primary health care profession, this involvement is a logical extension of the optometrist's responsibilities.

For future surveys it would be interesting to know if a higher percentage of the recently graduated optometrists perform blood pressure measurements than the less recently graduated optometrists. This information could be indicative of the effect of didactic courses and clinical practicum in the schools and colleges on the actual practice of measurement of blood pressure by optometrists.

According to a survey of all graduates from the University of Alabama School of Optometry from 1973 to 1979, a vast majority of the optometrists has incorporated blood pressure measurement into their office routines. This seems to indicate that school training in hypertension results in optometrists taking blood pressure measurements on their patients.

As indicated in the 1977 and 1980 national surveys, the majority of optometrists takes high blood pressure measurements on their patients. Whether this is a result of the training in the schools and colleges of optometry or continuing education courses sponsored by professional groups is unclear, since most practicing optometrists probably graduated before hypertension courses were part of the optometric curriculum. The continued emphasis given to high blood pressure detection and follow-up services by the profession of optometry, however, is clearly in the interest of public health.

Many national organizations can assist schools and colleges by offering technical assistance and educational materials. Resources include the American Heart Association, the National Kidney Foundation and the American Red Cross. In addition, the Veterans Administration has developed a manual, *Hypertension Specialist Training Program*, for a four-week course for nurses in the management of hypertensive patients in ambulatory care settings. This manual, edited by Carol A. Craft, R.N., M.S., is available from Grace Meyer, R.N., Staff Assistant III, Veterans Administration, Vermont & H Streets, N.W., Washington, D.C. 20420.

The National High Blood Pressure Education Program also offers information services on all aspects of high blood pressure. To obtain free information, publications and professional education tools, contact the High Blood Pressure Information Center, 120/80 National Institutes of Health, Bethesda, Maryland 20205, telephone (301) 652-7700.□

The majority of schools and colleges of optometry has incorporated specific training in the measurement of blood pressure, as well as in the management of hypertensive patients, in their curricula. *(Photo by John Carswell, UAB School of Optometry.)*

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